Climatological Data for February, 1910.

DISTRICT No. 4, LAKE REGION.

Prof. HENRY J. COX District Editor

GENERAL WEATHER CONDITIONS.

The "old fashioned" winter which was referred to in the January REVIEW as having set in early in December continued over the Great Lakes Basin and the St. Lawrence during February, although extremely low temperatures were seldom reported and the monthly mean temperatures at several stations were actually above the seasonal average. The ground, however, remained covered with snow, hard and compact and often in the form of ice, over practically the entire district, although in the Lake Michigan and Lake Huron sections there was a marked deficiency in the amount of snowfall. The usual number of storms crossed the region and, as a rule, they increased in energy as the lower Lakes were approached, causing, as a consequence, in eastern sections unusually heavy snows which reached or approached record proportions in sections of New York and Vermont. While the precipitation of the month was mostly in the form of snow, the storm of the 26-28th was accompanied by general rains in the southern Lake region and the St. Lawrence Valley, thus producing in those sections rapid melting and a well marked rise in the various streams, approaching in some instances the flood stage. The various disturbances were generally not accompanied by high winds, and the storm of the 15-16th was the only one attended by heavy gales. The cloudiness in the upper Lake region was much less than the average for the month of February, but in the lower Lake region it was considerably above.

TEMPERATURE.

The moderate temperature which prevailed at the close of January continued during the first few days of February throughout the district, except in the Lake Champlain watershed, where the month opened with minimum temperatures below zero. During the month there was a succession of warm and cold periods, each of a few days duration, and the month, as a whole, was seasonably cold, except for brief periods. The lowest temperatures of the month occurred on the 23d-25th, except in New York State, where they were lowest on the 5-7th. The following are among the lowest temperatures reported in the various sections: Floodwood, Minn., −40°; Crandon, Wis., −28°; Ewen, Mich., −38°; Chicago, Ill., −6°; Hillhouse, Ohio, −14°; Nehasane, N. Y., −36°; Wells, Vt., −24°. The highest temperatures occurred about the middle of the month, and exceeded 50° in portions of the southern Lake region.

PRECIPITATION.

The Lake Superior Basin was visited during the month by the usual number of snowstorms, but in the remaining portions of the upper Lake region there was a marked deficiency in the amount of precipitation. In fact, along the shores of southern Lake Michigan it was the smallest amount in any February in more than 30 years. From western Ohio eastward to the Green Mountains of Vermont there was a marked increase in precipitation, the snowfall in many instances in Ohio and portions of New York and Vermont exceeding all previous records and, as a result, causing extensive blockades in those sections. The heaviest falls of snow occurred in the storms of the 11-13th and 16-17th, and there were also extensive rains in the southern and eastern sections during the storm of the 26–28th. In northern Ohio during the storm of the 16-17th snowfalls of from 12 to 15 inches were reported, while in New York State during the storm of the 11-13th, the fall was even greater. The largest amount of rain and melted snow for the month was 9.06 inches at Adams Center, N. Y., where precipitation occurred on 25 days. The distribution of precipitation geographically was very uneven, there being great differences in amounts between places in close proximity. For instance, the snowfall at stations near the St. Lawrence River hardly reached the average, while in the district lying directly to the south the falls were excessive and, in fact, unprecedented. The periods of precipitation were well distributed through the month in all sections.

MISCELLANEOUS.

The following extracts from reports of Weather Bureau officials furnish special information supplementary to that found above:

Minnesota.—At the beginning of the month the harbor ice averaged 26 inches in thickness. At this time there was no ice in the lake. By the 14th harbor ice averaged 27.5 inches in thickness, and there was some broken ice in the lake. On the 16th there were some fields extending out about 20 miles. The arrival of the tug *Mayflower* at 9:30 p. m., the 17th, with fish from north shore points marked the close of local navigation. The Booth boats had, however, laid up on January 27. Between the latter date and February 17 there were no arrivals or departures. On the 21st the lake ice extended beyond vision, some of this ice being 7 inches thick; in the harbor at this time the ice averaged 29 inches in thickness. On the 25th harbor ice averaged 32 inches, with a solid field of lake ice extending more than 30 miles. On the 18th the harbor ice *still* averaged 32 inches, and that in the lake 12 inches. The outside ice then extended solid 20 miles with large fields farther out. The thickness of harbor ice is much greater than usual and exceeds that of any of the previous 11 winters, with the exception of the winter of 1903–4.—*H. W. Richardson, Local Forecaster, Duluth.*

Wisconsin.—The weather was cold, the precipitation was light, and there were few severe storms during the month. The mean temperature was about 1° below the normal. During the first half of the month the temperature was between zero and the freezing point most of the time, but during the latter half the weather was considerably colder, and the minimum temperature was below zero on nearly every day except in the extreme southern section. The lowest temperature for the month occurred at most stations on the 23d. Most of the rivers were frozen over during the entire month. In the harbors along the Lake Superior shore and in Green Bay, the ice was from 12 to 20 inches thick, but from Manitowoc south along the Lake Michigan shore the steamers kept the ice broken in the harbors.—*H. B. Hersey, Section Director, Milwaukee.*

Illinois.—The month, as a whole, was slightly below the average in temperature, but divided into warm and cold periods of 3 or 4 days duration. The coldest period was from the 22d to the 24th, inclusive, with a minimum temperature of −6°. The maximum temperature was 51° on the 15th. There was a marked deficiency in precipitation, the total amount, 0.69 inch, being the lowest recorded in any February since 1877. The ground, however, remained covered with snow and ice. In fact, at the close of the month the ground had been covered continuously since December 5, 1909—a period of 12 weeks, a condition without precedent in the previous history of the station. The sunshine, in strong contrast with that of 1909, was slightly above the average, and the month was mostly pleasant, with but few storms.—*Monthly Met'l Summary, Chicago.*

Indiana.—Some rain fell on the 2d and 3d, and again on the 26th and 27th, the latter storm being quite heavy and giving nearly one-half the total precipitation of the month. The precipitation during the interval between these storms was mostly in the form of snow, the heaviest falls being recorded on the 16th and 17th. The snowfall during this storm was very light in the vicinity of Lake Michigan, but increased in amount eastward and southward over the State. The greater part of the northern counties was covered with snow during the month. The warm rain during the closing days of the month caused a rapid rise in the streams, but not to an extent sufficient to produce more slight damage.—*V. H. Church, Section Director, Indianapolis.*

Michigan.—The month was seasonably cold, with 3 well-marked cold periods, the 5–7th, 17–19th, and the 22d–25th, the lowest temperatures generally occurring during the latter period. The month was drier than usual, though not decidedly so, except in scattered localities. There was not much thawing weather during the month and the snow covering remained on the ground in all parts of the State; however, it decreased in depth owing to its settling.—*C. F. Schneider, Section Director, Grand Rapids.*

Average temperature, 3.6° below the normal for the month. More snow on the ground than at any time since January, 1894. Ice averaged about 15 inches in thickness, covered with a heavy blanket of snow.—*A. S. Burns, Observer, Sault Ste. Marie,*

Brisk southwest winds on the night of the 18–19th anchored and windrowed the ice heavily along this shore. Navigation was almost impossible for several days. All the boats were caught in the ice and

held fast from 24 to 48 hours. No boats entered or left this port between the afternoon of the 18th and late at night of the 20th. The amount of ice in the harbor increased greatly during the latter part of the month, but a narrow channel was kept broken by the boats. Since the 20th the ice fields in the lake have been shifting with the winds, causing much inconvenience to navigation but not seriously interrupting it.—*C. H. Eshleman, Observer, Grand Haven.*

Ohio.—The month, as a whole, was somewhat colder than the average. There was considerably more than the usual amount of precipitation, which occurred largely in the form of snow. The snowfall was very heavy in the greater portion of the State. The warm weather and heavy rains of the last 3 days melted the snow and caused the rivers to rise rapidly, and at the close of the month all streams were approaching dangerous stages.—*M. W. Hayes, Section Director, Columbus.*

The ice on the Maumee River here ranged from 11 to 13 inches in thickness on the 7th, 12 to 16 inches on the 14th, 8.5 to 13.5 inches on the 21st, and 9 to 15 inches on the 28th, the heaviest average being about 14 inches on the 14th. All ice cutting of consequence was completed here before the beginning of February. The ice began to soften a little on the last 3 days of the month, but previous to the 26th, it remained in practically the same condition and changed but little in thickness.—*W. S. Currier, Local Forecaster, Toledo.*

The total snowfall at this station for the past month, 18.4 inches, is the greatest recorded in any February for the past 26 years except in 1893, when the total for the month was 22.1 inches. The total snowfall for the present winter thus far is 60.0 inches. This amount is far in excess of the same period of any winter at this station during the past 26 years. The record for total snowfall for the entire winter at Sandusky is 62.9 inches, this amount occurring during the winter of 1892–3.—*E. H. Nimmo, Local Forecaster, Sandusky.*

From February 17 to 26, the ice in the lake was solid in all directions beyond vision, but during the night of February 26–27, the ice field moved off shore, leaving the southern edge about 4 to 6 miles from shore. The snowfall to date for the present season is 76.2 inches, which is greater than any amount for any complete season during the past 24 years. The greatest previous amount for any season was 69.5 inches, in 1907–8.—*James Kenealy, Local Forecaster, Cleveland.*

Pennsylvania.—The normal snowfall for February is 10.8 inches. For the past month the fall was 23 inches. The greatest amount previously recorded for any February was 21.4 inches in 1894.—*G. R. Oberholzer, Local Forecaster, Erie.*

New York.—The amount of snowfall for the month was exceptionally large, and, in many instances, surpassed all known records. Only 5 out of 49 stations reported less than 20 inches of snowfall, while 13 reported more than 40 inches. At Adams Center the amount was 85 inches. The observer, Mr. A. E. Cooley, states that the snowfall for the 3 winter months, 244.5 inches, has not been equaled for many years and exceeds the average by about 65 per cent, and that for February by at least 75 per cent, while the average depth of snow was the greatest since 1879; the amount on the ground on the 15th was 44 inches. On the same date the depth at Blue Mountain Lake, Hamilton County, was given as 45 inches; at Nehasane, 50 inches; Old Forge, 42 inches; and Volusia, 47 inches. Mr. W. H. Lennon, the observer at Brockport, Monroe County, says that the snowfall for February was greater than for any other month in the last 10 years and greater than for any February since the beginning of his records. At both Buffalo and Rochester the snowfall of the current month was the greatest known. Remarkably heavy snow attended the storm which was central near New York on the 12th. The influence of this disturbance began on the 11th and continued until the 13th. The resulting snowfall amounted to 17 inches at Oswego, 18 at Adams Center, and 33 at Palermo. Dates of other heavy storms were the 3d, 9th, 17th, and the 27–28th. In the case of the last, the high temperature and heavy rainfall reduced the snow covering to a considerable extent and the streams rose rapidly. Flood stages were reached by those of the Lake region and much damage resulted, particularly along the Genesee River in and near Rochester.—*W. M. Wilson, Section Director, Ithaca.*

The month of February, 1910, has broken all records for snowfall for any corresponding month since 1885, when the unmelted snowfall began to be recorded, the amount for the month just closed being 43.7 inches. It caused considerable trouble to railroads and trolley lines, transportation being delayed from 3 to 6 hours each day during the greater part of the month. During the snowstorm of the 11th and 12th, 16.4 inches of snow fell and some of the railroads were completely blocked for from 3 to 5 days. The total precipitation for the month, 5.74 inches, was a record breaker for the month of February. The mean temperature was slightly below the normal with a minimum of −6° on the 6th; yet no severe cold waves occurred, the month being uniformly cold. A sudden thaw occurred from the 26th to the end of the month, and with the heavy rainfall caused serious and damaging floods along the lake shore from Dunkirk eastward and along the Niagara River towns from Buffalo to Niagara Falls.—*D. Cuthbertson, Local Forecaster, Buffalo.*

Snowfall, 43 inches, greatest February record. Bulk deposited during two storms, 11–13th, and 17–18th.—*L. M. Dey, Local Forecaster, Rochester.*

At the end of February the ice in Cazenovia Lake was 16 inches thick and in Oneida Lake 18 inches thick. Ice is thicker in both lakes than last winter, and there is more snow on the lakes than in many years. February snowfall twice that of any February in past 8 years.—*M. R. Sanford, Local Forecaster, Syracuse.*

Vermont.—The portion of Lake Champlain, known as "Broad Lake," became frozen over on February 11. The ice thickened rapidly and was in condition for cutting by the last of the month. The thaw caused water to flow over the ice, a depth of 9 inches being reported at the end of the month. On February 28 the ice was 11 inches thick. Operations have been held up, although some ice suitable for storage purposes has already been harvested.—*J. K. Hooper, Local Forecaster, Burlington.*

Following is an extract from the Oswego Times, Oswego, N. Y., February 28:

The roads in the country leading to the city are in an almost impassable condition as the result of the sudden thaw. There were pitch holes enough before the rain came, but now there are many more of them and they go in deeper. Heavy teaming is practically impossible, and it is even difficult to move heavy loads on the city streets. It is reported that along the Hall road the flats are covered with several feet of water and that the road is flooded for hundreds of feet. As a result of the sudden thaw all the creeks are running bank full, and a couple of more days will mean big floods in all the lowlands. The river has risen rapidly and at the present time there is a tremendous current running. Fortunately the Oswego is a decent, well-behaved river at all times and never rises above the docks within the city limits.

TOPOGRAPHY AND DRAINAGE—WEST SHORE OF LAKE MICHIGAN.

H. B. HERSEY, Inspector.

Beginning at the southern end of Lake Michigan, the west shore is generally low until it passes into Wisconsin. It then increases in elevation as it extends northward until it forms the ridge of comparatively high land between Green Bay and Lake Michigan.

The area draining directly into Lake Michigan is small, being only a narrow strip of land parallel to the lake, averaging from 15 to 20 miles in width. It is drained by small streams generally running parallel to the lake shore for some distance and then turning eastward into the lake. The most important of these streams are the Chicago River, having its source near the Wisconsin line, and running south until it empties into the lake at Chicago,[1] and the Milwaukee River, which pursues a southerly course for about 100 miles and passes through the City of Milwaukee into the lake. For the last 35 miles of its course the Milwaukee River is only 2 to 4 miles distant from the lake, but is separated from it by a ridge having an elevation varying from 75 to 150 feet above the level of the lake. It has quite a regular fall throughout its course averaging little more than 5 feet to the mile, and a drainage area of about 840 square miles.

Continuing northward only two streams worthy of mention are crossed before reaching Green Bay. These are the Sheboygan and the Manitowoc.

The Sheboygan rises within 4 miles of the eastern shore of Lake Winnebago at an elevation of nearly 400 feet above Lake Michigan, and pursues a circuitous course to the eastward, emptying into Lake Michigan at Sheboygan. Its drainage area is about 380 square miles.

The Manitowoc rises in the range of hills about 3 miles east of Lake Winnebago, and at an altitude of about 360 feet above Lake Michigan. It winds irregularly among the hills in an easterly direction until it reaches Lake Michigan. It has a drainage area of approximately 500 square miles. During the first half of its course it has a comparatively flat gradient, averaging 2.7 feet per mile, but in the last 35 miles its fall is about 8.3 feet per mile.

All other streams in Wisconsin whose waters eventually reach Lake Michigan pass through Green Bay. The most important of these is the Fox River, which has a drainage area of nearly 6,500 square miles. Of this area about 6,000 square miles drain into Lake Winnebago, the largest lake wholly

[1] The course of the Chicago River has been changed artificially, so that it now flows through the Drainage Canal into the Illinois River instead of into Lake Michigan.

TABLE 1.—*Climatological data for February, 1910. District No. 4, Lake Region.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Minnesota.																				
Cloquet	Carlton	892																		C. I. McNair.
Duluth	St. Louis	1,133	39	8.4	− 5.2	33	28	−22	23	31	1.13	+ 0.14	0.83	12.3	8	15	6	7	nw.	U. S. Weather Bureau.
Floodwood	do	1,257	6	5.8[b]		38[a]	28	−40[b]	17	47[b]						6[a]	13[a]	8[a]	nw.[a]	M. H. Schussler.
Mount Iron	do	1,510	16	4.6[d]	− 3.5	34[d]	28	−30	19	39[d]	0.79	+ 0.01	0.39	8.6	4	8	14	6	nw.	Oliver Iron Mining Co.
Stephens Mine	do	1,500	3	4.2		34	7	−35	18	41	0.50		0.20	5.4	6	13	7	8	w.	Do.
Two Harbors	Lake	614	16	12.8	− 0.4	38	3†	−24	16†	42	0.94	+ 0.14	0.70	15.0	3	14	9	5	nw.	George W. Watts.
Wisconsin.																				
Appleton	Outagamie	795	11	16.0	− 1.1	40	26	−18	23	26	0.88	− 0.38	0.35	10.0	8	11	12	5	w.	Wm. O. Thiede.
Ashland	Ashland	647	16	12.6	− 0.2	43	28	−23	23	47	1.11	− 0.05	0.52	19.0	7	22	3	3	sw.	Sam Wheeler.
Cecil	Shawano	804	3	13.8		40	26	−23	19	46	0.78		0.33	11.5	7	12	12	4	sw.	Louis W. Schmidt.
Chilton	Calumet	860	16	15.4	− 1.3	37	1†	−18	23	33	1.21	+ 0.09	0.40	9.8	8	7	15	6	nw.	Daniel V. Jones.
Crandon	Forest	1,060	15	10.7	− 5.1	34	26†	−28	18	42	1.55	+ 0.34	0.40	15.5	9	19	5	4	w.	Calvin T. H. Riggs.
Florence	Florence	1,293	19	11.0	− 1.3	39	7	−21	23	36	2.49	+ 1.27	0.70	20.0	6	19	1	8	nw.	Fred S. Evans.
Fond du Lac	Fond du Lac	800	24	14.4	− 2.8	38	26	−22	24	39	0.86	− 0.27	0.34	9.0	7	13	9	6	sw.	Geo. W. Marshall.
Grand River Locks	Marquette	616	14	12.4		40	26†	−24	23	37	0.66	− 0.28	0.40	6.0	4	15	9	4	nw.	Jerry Parkinson.
Green Bay	Brown	617	24	15.2	− 2.0	38	26	−16	23	27	1.07	− 0.53	0.37	10.8	10	8	7	13	sw.	U. S. Weather Bureau.
Herbster	Bayfield	700	2																	Wm. Angell.
Iron River	do	1,096	1	10.4		40	28	−26	23	39	0.70		0.50	7.0	3	16	4	8	s.	Harry C. Hall.
Kewaunee	Kewaunee	590	1	17.6		38	14	−15	23	30	1.55		0.50	15.5	7	18	1	9	w.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	59	18.4	0.0	41	26	−14	23	27	0.95	− 0.58	0.39	9.0	9	12	4	12	w.	Johanna Lups.
Menasha	Winnebago	764	13								0.59	− 0.13	0.24	6.5	4	20	1	7	sw.	George T. Allanson.
Menominee Falls	Waukesha	842	1	18.1		41	14	−13	23	36	0.82		0.28	5.1	6	12	10	6	nw.	Arthur H. Christman.
Milwaukee	Milwaukee	681	40	19.3	− 2.6	43	15	−11	23	29	0.58	− 1.31	0.27	5.1	6	11	9	8	w.	U. S. Weather Bureau.
New London	Outagamie	762	14	14.6	− 0.3	40	26	−18	23	35	0.84	− 0.40	0.30	8.0	4	10	6	12	sw.	August H. Pape.
Oconto	Oconto	590	19	15.3	− 1.4	41	26	−17	23	33	2.25	+ 0.87	0.60	22.5	7	15	4	9	sw.	William K. Smith.
Oshkosh	Winnebago	744	21	15.3	− 2.4	40	26	−19	23	33	0.72	− 0.40	0.40	7.0	5	16	11	1	sw.	Evan Vincent.
Pine River	Waushara	900	15	15.0	− 0.4	40	26	−20	23	37	0.50	− 0.28	0.18	4.7	6	9	10	9	nw.	George H. Carpenter.
Plum Island	Door	588	2	17.4		38	26†	−12	23	30	0.71		0.37		7	14	3	11	nw.	John P. Whelan.
Port Washington	Ozaukee	713	17	18.6	− 0.4	38	26	−14	23	28	0.80	− 0.83	0.40	7.0	3	14	4	10	nw.	Richard C. Kann.
Racine	Racine	633	13	21.0	+ 0.1	44	15	−11	23	30	0.36	− 0.96	0.15		4	11	3	14	w.	Daniel Davis.
Sheboygan	Sheboygan	831	12	19.7	+ 1.5	38	26	−12	23	26	0.70	− 0.92	0.30	7.0	4	13	7	8	nw.	Louis C. Meyer.
Sturgeon Bay	Door	600	12	15.6	− 1.7	36	8	−15	23	39	1.90		0.98	25.0	6	17	5	6	w.	Adam N. Dier.
Superior	Douglas	671	1	8.6		33	8†	−20	23	41	0.36		0.12	4.4	6	17	6	5	sw.	Edward B. Banks.
Waupaca	Waupaca	857	14	14.0	− 0.7	40	26	−22	24	41	0.75	− 0.15	0.32	12.5	5	9	6	13	sw.	James H. Flagg.
Illinois.																				
Chicago	Cook	824	40	24.8	− 0.6	51	15	− 6	23	26	0.39	− 1.27	0.52	2.8	6	6	9	13	sw.	U. S. Weather Bureau.
Indiana.																				
Auburn	DeKalb	874	14	22.0	− 0.4	50	15	− 3	19	42	1.51	− 0.81	0.75		9	12	2	14	w.	Mrs. Josie B. Kuhlman.
Berne	Adams	849		25.6		51	16	− 4	18	33	2.31		0.72	12.9	10	12	8	8	sw.	H. M. Reusser.
Elkhart§	Elkhart	801	8	26.8		54	5	4	24	31	1.46		0.70	5.8	8	8	6	14	n.	Dr. Miles Medical Co.
Fort Wayne	Allen	775	14	26.2	+ 0.4	48	15†	− 5	19	39	1.37	− 1.43	0.60	8.7	11	8	6	14	sw.	Orion E. Mohler.
Hammond	Lake	598	19	24.6	+ 1.4	50	15	− 8	23	35	1.39	− 0.90	0.63	2.0	4	9	5	14		Carson W. Whitney.
Howe	Lagrange	886	5	22.2		43	13†	2	24	37	1.55		0.85	7.0	6	14	0	14	sw.	James E. Zook.
South Bend	St. Joseph	726	17	22.8	+ 0.5	50	15	− 1	24	31	1.89	− 0.44	0.95	7.0	9	5	5	18	s..	Henry H. Swaim.
Whiting	Lake	606		28.2		53	15	− 6	23	32	0.70		0.38	1.0	6	14	6	8	sw.	D. H. Boyd.
Michigan—Upper Peninsula.																				
Baraga	Baraga	623	8	13.2[a]		42[a]	7	−19[a]	23	43[a]	1.30[a]		0.70[a]	13.0[a]	4[a]	12[a]	4[a]	11[a]	nw.[a]	D., S. S. & A. Ry.
Bergland	Ontonagon	1,300		10.8		42	7	−31	18	45	0.99		0.22		6	13	3	12	nw.	Frank McMonigal.
Blaney	Schoolcraft		3	12.0		35	3	−22	24	29						12	13	3	nw.	Dr. S. S. Hackwell.
Calumet	Houghton	1,246	22	12.0	− 1.3	31	26	−11	23	24	1.92	+ 0.36	0.32	24.0	14	8	6	14	w.	E. S. Grierson.
Chatham	Alger	875	9	11.6		42	7	−26	3†	46	1.58		0.37	15.8	13	5	12	11	nw.	U. P. Experiment Station.
Deer Park	Luce	610	9	15.2		36	28	−12	25	39	1.70		0.40	16.0	8	4	0	24	se.	Mrs. Sara E. McGaw.
Detour	Chippewa	585	9	14.5		48[a]	13	−15	11	49[a]	2.00		0.60	20.0	4	21	7	0	se.	Dr. F. E. Cameron.
Eagle Harbor	Keweenaw	622	11	16.0	+ 0.8	33	2†	− 6	23	34	1.63	− 0.44	0.55	16.3	11	7	10	12	sw.	John Nolen.
Escanaba	Delta	612	37	14.2	− 1.1	38	3	−15	23	30	1.47	+ 0.13	0.63	14.7	7	12	5	11	nw.	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	9	8.0		39	28	−38	19	52	2.60		0.80	26.0	9	6	9	13	sw.	W. B. Hatfield.
Grand Marais	Alger	610	9	15.0		38	5	− 6	23	28	2.90		0.40	32.0	12	5	1	22	s.	Mrs. Lena Truedell.
Houghton	Houghton	668	9	12.2	− 3.8	38	7	−16	25	41	1.54	− 0.17	0.45	21.6	15	6	11	11	w.	U. S. Weather Bureau.
Humboldt	Marquette	1,536	13																	D., S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	9	13.6		43	3	−18	23	40	1.20		0.56	17.0	5	19	1	8	nw.	Chapin Mining Co.
Iron River	Iron	1,504	13	9.4	+ 0.4	38	7	−33	18†	45	1.60	+ 0.53	0.50	13.0	5	17	8	3	nw.	Victor D. Laing.
Ironwood	Gogebic	1,520	7	10.6		38	7	−24	23	35	1.60		0.40	16.0	6	20	3	5	nw.	Prof. J. V. Brennan.
Ishpeming	Marquette	1,536	10	12.0[e]	+ 2.3	38[e]	7	−19[e]	23†	37[e]	1.30	− 0.60	0.40	13.0	10	9	8	11	nw.	Cliv'd. Cliffs Iron Co.
Isle Royale	Keweenaw	610	3																	John H. Malone.
Mackinac Island	Mackinac	831	10																	M. I. S. P. Com.
Maple Ridge	Delta		4	10.4		39	7†	−27	24	47	2.10		0.60	21.0	7	17	1	10	n.	Herman Johnson.
Marquette	Marquette	734	39	15.2	− 0.7	43	7	−10	23	29	2.81	+ 1.09	1.25	30.1	13	6	10	12	w.	U. S. Weather Bureau.
Menominee	Menominee	581	11	16.4[f]	+ 1.8	37[a]	26†	−13[f]	17	28[f]	1.23	+ 0.15	0.50	12.3	7	16	2	10	nw.	C. & N. W. Ry.
Newberry	Luce	773	8	12.4[a]		37[b]	3	−24	25	37[b]						9	14	5	nw.	D., S. S. & A. Ry.
Powers	Menominee	868	11	12.2	− 1.2	39	3	−24	24	41	1.48	+ 0.06	0.58	14.8	5	11	10	7	nw.	C. & N. W. Ry.
St. Ignace	Mackinac	593	20			38	2				1.13	− 0.32	0.40	11.3	7	15	5	8	n.	D., S. S. & A. Ry.
Sault Ste. Marie	Chippewa	614	22	9.8	− 3.6	34	3	−23	19	40	1.56	+ 0.15	0.51	19.4	12	9	8	11	se.	U. S. Weather Bureau.
Thomaston	Gogebic	1,347	13	9.2	− 0.3	38	7	−31	18†	41	1.20	− 0.09	0.30	12.0	8	9	12	7	n.	D., S. S. & A. Ry.
Victoria	Ontonagon	1,263		8.2		39	28	−27	23	40	0.79		0.25	10.0	8	13	5	10	w.	R. S. Schultz, jr.
Watersmeet	Gogebic		1	9.0		38	28	−35	18	50	1.04		0.45	10.4	8	13	4	11	nw.	B. N. Grant.
Wetmore	Alger	878	13	11.2	− 0.1	36	3†	−27	19	48	1.50	− 0.14	0.60	15.0	5	12	0	16	n.	D., S. S. & A. Ry.
Whitefish Point	Chippewa	610	20	12.8	+ 0.2	37	3	−18	25	35	3.75	+ 2.25	0.90	39.5	13	10	1	17	se.	Robert Carlson.
Michigan—Lower Peninsula.																				
Adrian	Lenawee	770	32	23.2	+ 0.2	42	20	− 2	19	34	2.05	− 0.47	0.70	5.5	6	2	7	19	s.	B. F. Gibbs.
Agricultural College	Ingham	820	46	21.9	− 0.5	45	16	0	6†	29	2.65	+ 0.82	0.50	4.0	10	5	18	5	s.	Prof. A. J. Patten.
Allegan	Allegan	698	19	25.0	+ 3.0	47	14	1	23	26	1.11	− 0.96	0.30	10.0	6	6	4	18	w.	Pere Marquette R. R.
Alma	Gratiot	750	23	19.5	0.0	42	16	− 7	24†	32	1.52	− 0.17	0.37	9.5	10	8	10	10	nw.	P. M. Smith.
Alpena	Alpena	609	37	17.0	− 0.8	38	14	−11	25	33	1.09	− 0.70	0.28	10.4	11	6	12	10	nw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	30	22.0	− 0.3	45	16	− 2	24	30	1.43	− 0.65	0.37	7.7	10	11	2	15	s.	University of Michigan.
Arbela	Tuscola	728	14	19.6	0.0	42	15	− 5	7†	33	1.97	+ 0.02	0.62	9.5	7	0	10	18	s.	Wm. Atkin.
Battle Creek	Calhoun	822	26	22.6	− 1.7	45	16	1	23	27	1.55	− 0.65	1.00	3.0	6	6	10	12	sw.	Elmer E. Sager.
Bay City	Bay	593	14	19.0	+ 1.3	43	16	− 6	6	38	2.85	+ 1.43	0.90	13.0	6	0	2	26	sw.	Pere Marquette R. R.
Benzonia	Benzie	832	14	19.7	+ 0.5	37	14	− 3	25	26	2.82	+ 0.38	0.65	27.5	16	5	10	13	nw.	Martin S. Joiner.
Berlin	St. Clair		21	18.6	− 1.7	42	16	− 8	25	36	1.68	− 0.27	0.51	6.7	9	4	11	13	nw.	R. O. Gould.
Big Rapids	Mecosta	906	14	17.8	+ 1.1	39	16	−14	25	38	1.90	− 0.21	0.60	13.0	9	11	4	13	w.	Charles Gay.
Bloomingdale	Van Buren		6	23.2		45	15	1	23	29	1.70		0.40	5.0	7	7	7	14	se.	John M. Haven.
Cadillac	Wexford	1,293	1	16.4		38	28	−11	6	30	1.90		0.90	17.0	8	10	7	11	sw.	A. J. Teed.
Cassopolis	Cass	903	9	22.4		40	3†	− 1	24	30	2.00		0.90	10.0	5	4	0	24	sw.	Michigan Central R. R.
Charlevoix	Charlevoix	610	23	17.5	0.0	36	28	−17	25	36	0.80	− 0.88	0.40	8.0	3	9	4	15	nw.	Pere Marquette R. R.
Charlotte	Eaton		6	22.1		45	16	− 1	1†	33	1.01		0.38	2.5	4	6	6	16	sw.	City of Charlotte.

TABLE 1.—*Climatological data for February, 1910. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Michigan—Lower Peninsula—Cont'd.																				
Cheboygan	Cheboygan	611	20	12.1	− 3.7	35	7	−16	24	35	1.30	+ 0.01	0.65	17.5	4	14	5	9	sw.	E. A. Bouchard.
Clinton	Lenawee	830	20	24.0	+ 1.3	47	28	− 4	24	37	1.34	− 0.56	0.43	4.0	6	6	11	11	nw.	David Woodward.
Coldwater	Branch	984	13	24.2	+ 3.2	46	16	2	1†	39	2.30	+ 0.53	0.60	5.0	8	8	4	16	nw.	Lake Shore & Mich. So. Ry.
Concord	Jackson	.....	5	21.9	.....	43	15	− 1	23	27	1.68	.....	0.95	.....	5	9	17	2	nw.	Dr. W. N. Armstrong.
Croton	Newago	685	2	21.0	.....	41	16	−11	24	34	0.90	.....	0.40	8.5	5	2	19	7	sw.	G. R.-Mus. Power Co.
Detroit	Wayne	730	39	22.4	− 2.6	46	15	3	19	25	1.84	− 0.35	0.58	9.1	13	5	10	13	sw.	U. S. Weather Bureau.
Durand	Shiawassee	799	3	21.8	.....	42	28	0	6†	28	1.08	.....	0.38	5.0	5	8	15	5	sw.	Grand Trunk Ry.
East Tawas	Iosco	590	13	18.8	+ 1.8	40	8†	−16	25	36	1.20	− 0.03	0.40	13.0	6	21	5	2	nw.	Detroit & Mackinac Ry.
Eloise	Wayne	640	13	22.0[e]	+ 2.1	45[e]	16	− 4[e]	24	32[e]	1.30[e]	− 0.93	0.41[e]	5.2[e]	9[e]	6[e]	7[e]	12[e]	w.[e]	John Gilmore.
Flint	Genesee	730	21	21.9	+ 1.7	46	15	0	6†	39	1.08	− 0.31	0.50	6.0	7	9	11	8	w.	Wm. L. Fisher.
Frankfort	Benzie	589	6	20.7	.....	37	28	− 5	25	26	2.70	.....	0.50	27.0	13	12	0	16	w.	Capt. Geo. Morency.
Ganges	Allegan	665	1	23.3	.....	44	15†	4	7	28	1.35	.....	0.40	8.0	9	5	10	13	nw.	H. H. Hutchins.
Gaylord	Otsego	1,367	5	16.2	.....	38	26†	−12	6†	28	.....	.....	.....	.....	.....	9	1	18	nw.	Michigan Central R. R.
Gladwin	Gladwin	794	14	17.4	− 0.5	38	20	−22	24	42	0.95	− 0.56	0.50	5.0	3	18	5	5	s.	Geo. R. Smith.
Grand Haven	Ottawa	628	29	22.8	− 1.4	43	15	3	23	25	1.59	− 0.32	0.58	13.6	13	4	10	14	n.	U. S. Weather Bureau.
Grand Rapids	Kent	707	21	22.8	− 2.7	48	15	0	23	23	1.15	− 0.76	0.60	4.9	13	4	6	18	s.	Do
Grape	Monroe	625	20	23.6	− 0.2	46	1†	− 1	18†	32	1.29	− 0.46	0.48	5.8	12	8	12	8	w.	Joseph W. Morris.
Grass Lake	Jackson	989	4	21.4	.....	43	16	0	7†	29	1.29	.....	0.50	7.0	4	13	4	11	sw.	Menzo Conklin.
Grayling	Crawford	1,147	21	16.5[g]	+ 1.1	38[g]	28	−28[g]	24	54[g]	.....	.....	.....	.....	.....	17[i]	2[i]	0[i]	sw.[g]	Dr. Oscar Palmer.
Harbor Beach	Huron	635	22	19.4	− 0.5	41	9	− 8	24	34	2.15	+ 0.79	0.60	21.0	8	11	3	14	sw.	Pere Marquette R. R.
Harrison	Clare	1,159	17	18.0	+ 1.0	39	4	−20	25	40	1.60	+ 0.30	0.40	16.0	7	2	8	18	s.	Do.
Harrisville	Alcona	616	26	17.1	− 1.6	36	8†	−18	24	40	1.40	− 0.84	0.40	15.5	7	8	13	7	nw.	Dr. D. W. Mitchell.
Hart	Oceana	698	18	21.8[e]	+ 0.6	37[e]	15†	− 2[e]	25	27[e]	1.60[e]	− 0.45	0.40[e]	16.0[e]	6[e]	2[e]	11[e]	10[e]	w.[e]	Pere Marquette R. R.
Hayes	Huron	620	20	17.4	− 1.3	39	26†	−14	25	39	1.63	− 0.15	0.60	12.0	5	13	3	12	nw.	C. F. Leipprandt.
Highland	Oakland	830	18	.....	.....	.....	.....	.....	.....	.....	2.71	+ 0.61	1.15	10.5	9	.....	.....	.....	.....	A. D. De Garmo.
Hillsdale	Hillsdale	1,150	13	22.3	+ 3.1	44	15	0	24†	27	1.46	− 1.23	0.40	5.5	9	10	2	16	nw.	Prof. C. L. Herron.
Holland	Ottawa	610	4	23.4	.....	47	14	3	23	26	2.18	.....	0.66	12.5	13	0	19	9	sw.	City of Holland.
Howell	Livingston	924	18	20.6[e]	− 0.2	43[e]	16	− 4[e]	24	31[e]	1.50[e]	− 0.24	1.00[e]	3.6[e]	6[e]	3[e]	10[e]	12[e]	sw.	Frank Sharp.
Ivan	Kalkaska	.....	21	14.8	− 1.9	37	28	−24	6	35	1.01	− 0.73	0.20	11.5	9	6	9	13	nw.	O. L. Giddings.
Jackson	Jackson	927	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Central R. R.
Jeddo	St. Clair	667	21	17.7	− 2.3	40	16	−11	24	33	1.44	− 0.30	0.30	11.5	11	6	10	12	sw.	William Bice.
Kalamazoo	Kalamazoo	955	34	22.6	− 1.3	45	15†	3	23†	26	1.30	− 0.92	0.48	2.7	7	8	6	14	sw.	Kalamazoo Asylum.
Lansing	Ingham	881	23	22.2	+ 0.6	44	16	0	23	28	1.31	− 0.55	0.35	6.0	10	8	6	14	nw.	State Board of Health.
Lapeer	Lapeer	827	11	22.1	+ 3.3	46	15	− 5	10	32	1.19	− 0.91	0.71	4.5	4	0	27	1	nw.	Michigan Home.
Ludington	Mason	586	12	22.2[d]	+ 1.3	41[d]	28	0[d]	23†	32[d]	1.81[d]	+ 0.13	0.50[d]	17.0[d]	7[d]	3[d]	14[d]	7[d]	sw.[d]	Pere Marquette R. R.
Luther	Lake	1,028	.....	18.2	.....	37	16†	−17	25	35	1.52	.....	0.37	11.8	14	7	11	10	w.	John W. Nicholson.
Mackinaw	Cheboygan	592	14	16.7	+ 2.3	41	2	−14[a]	24	35[a]	0.99	− 0.42	0.60	10.0	8	16	1	11	w.	Grand Rapids & Ind. R.
Mancelona	Antrim	1,121	14	14.8	0.0	38	28	−22	25	40	0.80	− 1.09	0.60	8.0	2	10	5	13	w.	Do.
Manistee	Manistee	600	13	23.1	+ 3.7	40	17	− 5	24	30	1.50	− 0.81	0.50	15.0	5	6	9	13	sw.	Pere Marquette R. R.
Midland	Midland	604	11	20.1	+ 1.4	39	20	−12	24	37	0.99	− 0.20	0.35	9.9	4	6	13	9	sw.	Do.
Montague	Muskegon	660	7	20.4	.....	40	15	− 2	25	29	.....	.....	.....	.....	.....	7	12	9	nw.	Gerard A. Whitbeck.
Morenci	Lenawee	811	3	23.4	.....	46	16	− 3	19	35	1.65	.....	0.65	4.8	10	8	7	13	sw.	George J. Tripp.
Mount Clemens	Macomb	615	10	21.0	+ 1.0	48	15	− 4	24	32	1.22	− 0.31	0.45	6.0	7	12	4	12	nw.	Herman Orbits.
Mount Pleasant	Isabella	826	11	17.8	+ 0.1	40	16	−10	25	39	.....	.....	.....	3.5	....	12	5	11	sw.	Pere Marquette R. R.
Muskegon	Muskegon	587	14	22.2	+ 2.2	40[a]	15†	3[a]	22†	26[a]	1.57	− 0.14	0.60	13.0	9	4	1	23	n.	Grand Rapids & Ind. Ry.
Old Mission	Grand Traverse	848	16	18.6	+ 0.3	41	28	− 7	25	29	1.20	− 0.37	0.22	12.0	9	8	9	11	w.	E. O. Ladd.
Olivet	Eaton	934	20	21.9	0.0	43	15	0	23	26	1.59	− 0.43	0.86	6.0	8	8	4	16	s.	Prof. G. A. Knapp.
Omer	Arenac	616	11	.....	.....	.....	.....	.....	.....	.....	1.65	+ 0.32	0.65	10.0	4	1	17	10	sw.	Detroit & Mackinac Ry.
Onaway	Presque Isle	826	7	13.8	.....	38	28	−15	25	35	2.15	.....	0.70	17.0	4	10	0	18	se.	Do.
Ovid	Clinton	760	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. B. Faxon.
Owosso	Shiawassee	731	13	23.8	+ 3.9	62	21	− 1	7	44	1.35	− 0.38	0.50	4.5	5	2	14	12	nw.	Owosso Sugar Co.
Petoskey	Emmet	660	20	16.6	− 0.2	36	26	−12	25	35	2.37	+ 0.74	0.50	22.0	10	6	13	9	w.	Grand Rapids & Ind. Ry.
Plymouth	Wayne	725	13	23.2	+ 2.1	45	16	− 7	11	36	1.50	+ 0.01	0.60	4.0	3	7	9	12	w.	Pere Marquette R. R.
Pontiac	Oakland	935	10	21.0[a]	− 2.5	43	16	− 5	24	29[b]	1.47	+ 0.03	0.45	7.2	12	11	7	10	nw.	Fred W. Shaw.
Port Austin	Huron	618	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pere Marquette R. R.
Port Huron	St. Clair	639	35	20.1	− 1.9	43	15	− 3	24	29	1.25	− 0.90	0.45	9.4	10	8	6	14	sw.	U. S. Weather Bureau.
Reed City	Osceola	1,033	14	.....	.....	48	22	.....	.....	.....	1.43	− 0.22	0.50	9.5	8	2	7	19	nw.	Pere Marquette R. R.
Roscommon	Roscommon	1,141	6	13.2[b]	.....	36[b]	14†	−27[b]	25	42[b]	0.80[b]	.....	0.30[b]	8.0[b]	5[b]	11[b]	8[b]	7[b]	w.[b]	William Marsh.
Saginaw	Saginaw	601	8	22.4	.....	44	16	− 1	24	28	1.65	.....	0.40	9.5	11	5	16	7	sw.	Postmaster.
Saginaw, W. S.	....do	601	15	21.6	+ 1.5	45	16	− 4	24	30	1.23	− 0.90	0.27	7.8	11	5[a]	15[a]	7[a]	nw.	Robert B. Hudson.
St. James	Charlevoix	681	4	16.2	.....	36	26	− 5	6†	30	1.35	.....	0.40	13.5	7	9	6	13	nw.	Rev. N. Wilhelm.
St. Johns	Clinton	779	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	City of St. Johns.
St. Joseph	Berrien	593	23	24.4	− 2.4	47	15	5	23	23	1.40	− 1.14	0.90	6.0	5	5	8	15	sw.	City of St. Joseph.
Sandusky	Sanilac	790	1	18.4	.....	43	16	−15	25	35	2.77	.....	0.90	10.0	5	11	6	11	s.	Pere Marquette R. R.
Saranac	Ionia	639	15	21.2	− 2.0	42	16	− 3	23†	32	1.36	− 0.92	0.37	8.0	9	5	7	16	sw.	John Wallington.
South Haven	Van Buren	585	14	.....	.....	.....	.....	.....	.....	.....	0.70	− 0.95	.....	5.0	4	13	9	6	se.	Mrs. M. E. De Diemar.
Stanton	Montcalm	880	17	17.8[d]	− 1.5	48[d]	20	− 8[d]	24†	43[d]	0.91[d]	− 0.44	0.20[d]	9.0[d]	7[d]	9[d]	6[d]	9[d]	nw.[d]	City of Stanton.
Thornville	Lapeer	975	33	22.4	− 0.5	40	2†	−10	25	38	1.93	− 0.09	0.40	15.0	10	0	8	20	sw.	Dr. J. S. Caulkins.
Traverse City	Grand Traverse	588	13	20.5	+ 2.0	40	26	−12	24	30	0.65	− 1.27	0.50	6.5	3	14	0	14	nw.	Grand Rapids & Ind. Ry.
Vassar	Tuscola	641	9	23.6	.....	43	16	7	24	25	.....	.....	.....	3.0	....	7	12	9	nw.	Pere Marquette R. R.
Wasepi	St. Joseph	842	13	22.6	+ 1.1	47	15	0	24	33	1.62	− 0.50	0.80	5.0	8	14	0	14	sw.	Chas. A. Palmer.
Webberville	Ingham	884	8	21.6	.....	43	2	− 2	24	29	1.26	.....	0.41	6.8	8	4	11	13	w.	I. R. Wadsworth.
West Branch	Ogemaw	973	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13[a]	5[a]	3[a]	.....	Michigan Central R. R.
Woodlawn	Montmorency	.....	8	11.4	.....	34	26	−30	24	42	1.70	.....	0.65	17.0	6	12	4	12	w.	T. C. Mathews.
Ypsilanti	Washtenaw	736	25	21.4	− 1.5	42	16	− 3	18	34	2.44	− 0.02	0.65	8.5	11	5	18	5	nw.	Orin J. Bemiss.
Ohio.																				
Akron	Summit	1,081	23	23.1	− 2.7	46	27	− 3	25	39	3.68	+ 1.10	0.90	25.3	13	9	4	15	sw.	Prof. C. R. Olin.
Benton Ridge	Hancock	800	17	26.2	+ 1.1	48	16	0	18†	31	2.58	+ 0.25	0.80	18.3	11	6	8	14	sw.	J. W. Powell.
Bowling Green	Wood	670	30	24.0	+ 1.0	49	16	− 8	19	34	2.38	− 0.02	0.74	12.5	9	13	2	13	sw.	G. C. Houskeeper.
Bucyrus	Crawford	1,000	15	21.4	− 2.3	44	2†	− 8	18	32	4.60	+ 2.66	1.10	30.0	7	9	3	16	sw.	James R. Hopley.
Cleveland (1)	Cuyahoga	762	39	23.8	− 3.0	50	15	1	25	37	3.98	+ 1.37	0.86	30.5	14	6	6	16	s.	U. S. Weather Bureau.
Cleveland (2)§	....do	754	13	23.7	− 0.5	49	15	− 2	24	32	4.98	+ 2.99	0.90	35.2	14	9	3	16	sw.	Rev. F. L. Odenbach, S. J.
Defiance	Defiance	712	16	23.8	+ 0.4	48	16	− 9	19	38	1.34	− 0.71	0.34	5.6	9	14	1	13	s.	John F. Heilshorn.
Findlay	Hancock	776	21	22.0	− 4.2	49	15	− 5	19	48	3.90	+ 0.90	0.95	20.5	8	15	8	5	se.	Dr. E. A. Moser.
Fremont§	Sandusky	628	9	25.0	.....	48	16	− 3	19	33	2.68	.....	0.85	22.5	8	13	4	11	sw.	E. Stanley Thomas.
Hedges	Paulding	725	16	23.7	+ 0.9	46	2†	−12	19	38	3.20	+ 1.10	0.65	17.0	10	12	4	12	nw.	Charles Stutzman.
Hillhouse	Lake	997	18	22.1	+ 0.3	45	16†	−14	25	34	3.67	+ 1.07	0.60	25.5	11	9	7	12	w.	J. W. Doncaster.
Hiram	Portage	1,260	26	22.8	− 1.3	46	15	− 2	25	36	3.73	+ 1.04	0.75	28.0	13	4	9	15	nw.	Prof. G. H. Colton.
Hudson	Summit	1,153	49	22.6	− 0.8	54	26	−10	25	41	4.19	+ 1.09	0.90	30.5	13	10	6	12	sw.	Dr. W. I. Chamberlain.
Lima	Allen	875	11	26.0	+ 0.3	47	2†	0	18	28	3.73	− 0.02	1.00	24.0	8	17	2	9	w.	Miss Ollie De Long.
Medina	Medina	944	22	22.8	− 0.9	47	16	−11	24†	39	4.33	+ 2.36	1.03	26.0	9	13	2	13	w.	F. W. Clark.
Montpelier	Williams	880	18	24.0	+ 1.4	45	16	− 1	19†	35	2.31	− 0.21	0.83	9.0	7	8	3	17	w.	G. L. Laser.
Napoleon	Henry	680	24	25.6	+ 2.5	49	16	− 2	19	30	1.86	− 0.28	0.61	6.7	10	12	2	14	s.	A. C. Senter.
New Bremen	Auglaize	1,038	17	25.3	+ 0.8	49	2	− 5	19	36	3.22	+ 1.25	0.80	21.5	8	12	10	6	w.	Miss Lillian Grothaus.
North Royalton	Cuyahoga	1,000	18	22.4	− 0.7	46	16	− 6	25	32	3.75	+ 1.32	0.80	28.0	10	10	10	8	nw.	W. S. Edgerton.
Norwalk	Huron	719	24	25.0	+ 1.5	47	16†	− 9	24	35	4.68	+ 2.58	0.90	33.0	11	14	2	12	nw.	Dr. Albert Sheldon.

TABLE 1.—*Climatological data for February, 1910. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio—Cont'd.																				
Oberlin	Lorain	855	35	23.9	− 1.9	49	16	−11	19	39	4.15	+ 1.80	0.68	33.6	13	14	1	13	w.	Prof. F. F. Jewett.
Ottawa	Putnam	720	18	24.6	− 0.4	48	16	− 5	19	37	1.89	− 0.12	0.69	12.6	10	3	15	10	sw.	Prof. J. T. Maidlow.
Rome	Ashtabula	894	3																	G. H. Crosby.
Sandusky	Erie	629	33	24.5	− 2.6	48	26	2	19	28	2.97	+ 0.58	0.90	18.4	12	8	7	13	sw.	U. S. Weather Bureau.
Tiffin	Seneca	775	28	25.0	− 1.6	49	16	− 1	24	34	3.83	+ 1.01	1.00	23.0	10	13	5	10	sw.	Prof. T. H. Sonnedecker.
Toledo (1)	Lucas	769	39	24.9	− 1.9	48	15	1	19	26	2.32	+ 0.36	0.72	9.2	12	10	6	12	sw.	U. S. Weather Bureau.
Toledo (2)§	...do	606	6	24.8		48	15†	0	19	37	1.97		0.47	6.5	13	9	5	14	n.	J. A. Krance, S. J.
Upper Sandusky	Wyandot	854	27	25.1	− 2.3	50	16	− 4	24	29	3.70	+ 0.82	1.10	25.5	10	13	5	10	nw.	Prof. R. J. Kiefer.
Vickery	Sandusky	588	17	24.0	+ 0.3	48	16	−10	19	42	2.50	+ 0.59	1.00	11.2	11	10	7	11	nw.	John W. Barr.
Wauseon	Fulton	780	38	23.7	− 1.0	48	15	− 1	19†	37	1.94	− 0.98	0.67	9.7	13	6	7	15	s.	Thomas Mikesell.
Wellington	Lorain	856	16	24.2	− 0.7	50	16	− 9	24†	42	4.36	+ 2.11	1.00	25.5	12	8	9	11	sw.	W. D. Warren.
Willoughby	Lake	649	16								4.00	+ 1.96	1.17	19.0	8	1	7	20	s.	C. J. Richardson.
Pennsylvania.																				
Erie	Erie	713	37	23.7	− 2.4	49	15	− 1	25	33	4.02	+ 1.17	1.28	23.0	16	3	9	16	s.	U. S. Weather Bureau.
New York.																				
Adams Center	Jefferson	540	19	17.4	− 1.7	44	16†	−28	7	46	9.06	+ 6.02	1.40	85.0	25	0	14	14	se.	A. E. Cooley
Angelica	Allegany	1,340	27	20.2	− 1.2	46	28	−22	25	38	3.75	+ 1.95	0.92	38.0	16	2	8	18	w.	Charles P. Arnold.
Appleton	Niagara	270	19	22.7	− 0.7	46	27	− 3	11	35	2.72	+ 0.57	0.75	17.2	9	3	8	17	sw.	H. A. Van Wagoner.
Auburn	Cayuga	715	41	19.2	− 5.4	41	15	−10	7	28	4.00	+ 1.88	1.30	32.0	9	10	11	7	s.	A. H. Underwood.
Avon	Livingston	585	15	20.3	− 1.4	44	27	−10	24	42	3.42	+ 1.67	0.92	26.0	12	5	5	18	.....	W. G. Markham.
Benson Mines	St. Lawrence		2																	R. C. Folger.
Blue Mountain Lake	Hamilton	1,750	10								6.17	+ 3.13	1.20	44.0	12	12	5	11	w.	B. F. Merwin.
Brockport	Monroe	537	14	22.6	+ 0.8	44	16†	− 4	11	30	4.08	+ 1.58	0.75	38.0	13	5	12	11	w.	W. H. Lennon.
Buffalo	Erie	767	59	21.9	− 2.1	47	27	− 6	6	33	5.74	+ 2.89	1.61	43.7	17	5	5	18	sw.	U. S. Weather Bureau.
Canton	St. Lawrence	448	16	15.2	− 2.8	43	27	−27	11	42	2.87	+ 0.30	0.89	17.1	19	7	9	12	sw.	Do.
Cape Vincent	Jefferson	246	5	16.6		40	15†	−20	10	38	1.59		0.50		8	12	7	9	s.	Verne M. Rice.
Carvers Falls	Washington	243	12	15.0	− 0.6	47	16	−34	7	49	4.61	+ 2.29	0.92	28.0	10	11	8	9	n.	Washburn Fancher.
Chazy	Clinton	151	10	14.6	− 0.5	38	21†	−18	11†	38	2.20	+ 0.71	1.00	22.0	4	12	7	9	n.	W. R. North.
Dannemora	Clinton	1,490	5	14.4		45	28	−20	7	46	3.88		1.40	30.8	11	5	14	9	w.	W. N. Thayer.
Elba	Genesee	500	11	19.8	− 0.4	45	16	−11	11	36	5.45	+ 2.57	1.00	44.0	12	10	7	11	sw.	Jos. S. Wilford.
Fayetteville	Onondaga	530	9	22.8		51	28	−16	7	44	3.49	+ 1.51	0.85	32.5	14	8	7	13	nw.	Dana H. Wells.
Gabriels	Franklin	1,729	8	13.4		40	27†	−27	7	48	2.56		0.55	23.1	18	7	7	14	nw.	Sanatorium.
Harkness	Clinton	622	8	15.9		46	27	−16	7	41	3.00		0.85	25.5	10	21	0	7	w.	J. W. Harkness.
Hemlock Lake	Livingston	900	12	21.3	+ 0.9	44	27	− 6	7	34						6	6	16	w.	D. H. Westbury.
Hunt	...do	1,321	11	23.8	+ 1.2	48	27	−11	24	39	3.99	+ 2.17	1.08	32.0	7	6	11	11	sw.	W. S. Barrager.
Ithaca	Tompkins	928	32	23.2	− 1.9	49	28	− 6	25	30	3.31	+ 1.44	0.89	21.2	17	5	9	14	nw.	U. S. Weather Bureau.
Keene Valley	Essex	1,000	12	16.2[b]	− 3.5	48[b]	16	−18[b]	6†	43[b]	4.35	+ 2.01	1.04	33.0	9	13	6	9	w.	E. R. Wells.
King Ferry	Cayuga		10								2.89	+ 1.05	0.84	29.0	13	7	7	14	nw.	Lucius A. Goodyear.
Lake George	Warren	350	13	18.8	+ 1.0	50	16	−16	7	42	6.14	+ 2.67	1.07	47.7	12	11	9	8	ne.	Charles Forsell.
Lake Placid Club	Essex	1,864	2	11.2		41	16†	−26	11	50	6.57		1.15	50.5	17	7	9	12	nw.	Henry van Hoevenberg.
Le Roy	Genesee	920	20	21.9	+ 0.9	45	16	− 9	24	31	4.52	+ 1.24	0.94	38.8	17	5	9	14	w.	F. W. Ball.
Lockport	Niagara	650	23	21.8	− 1.5	44	27	− 5	7	35	4.00	+ 1.65	0.85	35.2	15	4	3	21	sw.	J. E. Wakeman.
Lowville	Lewis	900	43	13.9	− 5.6	47	28	−28	7	48	4.54	+ 1.83	1.35	.....	7	8	4	16	w.	Charles J. Rice.
Lyndonville	Orleans		14								2.19	+ 0.48	0.63	.....	7	5	3	20	sw.	Milton St. John.
Moira	Franklin	200	10	15.8	+ 0.6	45	21	−20	7	35	4.55	+ 1.36	0.90	37.5	12	10	9	9	w.	C. E. McBride.
Nehasane	Hamilton	1,750	2	13.2		46	28	−36	25	54	8.24		1.29	57.8	15	14	1	13	w.	A. C. Heyburn.
North Lake	Herkimer	1,822	9																	H. A. Paull.
Ogdensburg	St. Lawrence	175	26	17.8	+ 0.7	42	27	−21	11	51	1.89	− 0.24	0.33	11.1	10	8	12	8	s.	State Hospital.
Old Forge	Herkimer	1,733	2	14.6		52	28	−32	7	59	5.84		1.20	51.4	19	4	10	14	w.	Stuart W. Nelson.
Oswego	Oswego	335	40	21.5	− 2.4	48	16	−10	7	36	5.02	+ 2.45	1.60	39.6	19	2	5	21	s.	U. S. Weather Bureau.
Otto	Cattaraugus	1,410	6	20.6		44	17†	−11	7	34	3.47		0.70	.....	9	10	4	14	.....	William Winke.
Palermo	Oswego	460	51								6.53	+ 3.50	2.41	56.9	22	7	8	13	s.	E. B. Bartlett.
Perry City	Schuyler	1,038	30	21.2	− 0.2	48	27	−13	19	40	4.37	+ 2.25	1.35	39.3	11	6	4	18	nw.	W. H. Jeffers.
Philadelphia	Jefferson	485	4	16.2		46	27	−24	11	42	3.32		0.75	26.0	16	4	13	11	w.	E. D. Babcock.
Plattsburg	Clinton	170	60	16.1	− 2.1	44	16	−18	7	43	2.80	+ 1.20	0.70	19.8	10	10	13	5	nw.	T. P. Davison.
Potsdam	St. Lawrence	300	34	17.1	− 1.0	44	27	−24	11	41	3.56	+ 1.65	1.10	28.5	7	9	4	15	sw.	Lloyd W. Weed.
Raquette Lake	Hamilton		2	16.1		48	28	−29	25	47	6.21		0.89	45.5	14	4	5	19	nw.	R. J. Dunning.
Rochester	Monroe	523	81	22.2	− 1.7	48	16	− 2	7	32	3.73	+ 0.90	0.87	43.0	18	5	9	14	w.	U. S. Weather Bureau.
Romulus	Seneca	719	18	22.7	− 0.9	44	27†	− 2	7	25	4.77	+ 3.08	1.60	42.4	11	5	9	14	nw.	John H. Coryell.
Shortsville	Ontario	740	11	21.4	− 0.4	46	16	− 4	7	30	3.32	+ 1.74	0.50	14.2	6	6	12	10	nw.	C. H. Latting.
Skaneateles	Onondaga		15								4.10	+ 1.68	0.75	.....	18					Edward Conron.
Syracuse	...do	597	8	22.1	− 1.7	48	16	−11	7	30	3.64	+ 1.84	1.20	36.7	16	4	8	16	s.	U. S. Weather Bureau.
Ticonderoga	Essex	344	12	18.7	+ 0.3	46	27	−32	7	47	4.23	+ 2.05	1.35	27.0	8	14	7	7	n.	Eva M. De Lano.
Trudeau	...do	1,620	17	16.8	+ 1.9	46	28	−27	7	49	3.86	+ 1.77	0.63	38.2	18	5	10	13	.....	Daniel Smith.
Tupper Lake	Franklin	1,552	10	13.6	+ 0.2	46	28	−34	25	58	4.79	+ 2.27	1.50	45.0	13	9	4	15	w.	Aaron W. Maddox.
Volusia	Chatauqua	1,167	11	20.1	− 0.3	44	27	−10	24	30	4.31	+ 1.71	0.90	35.0	15	6	9	13	w.	Benjamin Breads.
Watertown	Jefferson	737	18																	L. L. Allen.
Wedgewood	Schuyler	1,430	21	20.3	− 1.9	45	16†	− 9	7	27	3.91	+ 1.68	0.95	35.0	14	11	5	12	nw.	Orlando F. Corwin.
Westfield	Chatauqua	837	14	22.2	− 0.5	47	16	−10	24	38	4.98	+ 2.74	0.80	34.5	14					John R. Rogers.
Youngstown	Niagara		8								3.57		1.13	32.0	9	1	22	5	sw.	B. V. Brookins.
Vermont.																				
Burlington	Chittendon	404	3	16.1	− 1.8	45	16	−17	7	38	3.10	+ 1.73	0.92	27.6	14	4	13	11	s.	U. S. Weather Bureau.
Cornwall	Addison	507	17	18.0	− 1.2	51	16	−16	7	40	2.76	+ 0.60	0.84	32.0	8	7	11	10	n.	C. H. Lane.
Enosburg Falls	Franklin	601	19	14.2	− 2.8	45	27	−22	25	44	3.54	+ 0.52	0.82	29.0	15	7	7	14	nw.	L. Howe Pomeroy.
Northfield	Washington	876	24	14.8	− 2.4	51	16	−23	25	46	3.63	+ 1.37	0.90	36.3	15	6	6	16	s.	U. S. Weather Bureau.
Rutland	Rutland																			H. L. Hindley.
Wells	...do	750	19	16.5	− 2.4	42	16†	−24	7	36	5.01	+ 2.02	1.15	28.0	11	7	12	9	sw.	E. R. Pember.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
* Precipitation included in that of the next measurement.
** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
† Also on other dates.
‡ Separate dates of falls not recorded.
‖ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
‖‖ Estimated by observer.
Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for February, 1910. District No. 4, Lake Region.*

Stations.	River basins.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Minnesota.																																	
Cloquet	Lake																																
Duluth	...do		.01						T.	T.	.04	.04				.83				.04	.01		.02			.14	T.						1.13
Floodwood	...do																																
Mount Iron	...do									.09						.27	T.									.39	.04						0.79
Stephens Mine	...do								.03	T.	T.	.05				.16					.02		.04			.20	T.						0.50
Two Harbors	...do		T.							T.	.10	T.				.70	T.				T.					.14							0.94
Wisconsin.																																	
Appleton	Fox		T.							.02		.03	.06		.05	.11	T.			T.	.18		.08				.35						0.88
Ashland	Lake		T.							.20	.10	.04				.52	.05				.08					.12							1.11
Cecil	Fox		.04							.07	.03				.02	.33							.12				.17						0.78
Chilton	...do		T.	.04						T.	T.	T.	.10			.15	T.			T.	.35	.03	.10				.40	.04					1.21
Crandon	...do		T.							.40	.20	.20	.05			*	.30				.10		.10		T.	.20							1.55
Florence	Menominee		.10						T.	.40		.70				*	.66				.23		T.		.40								2.49
Fond du Lac	Fox											T.	.05		T.	.10				.03	.34		.03				.24	.07					0.86
Grand River Locks	...do		T.	.02												.15	T.				.40	T.	T.				.09	T.					0.66
Green Bay	Lake		.03							.10		.02	.02		.03	.32					.15		.03			.01	.36						1.07
Herbster	...do																																
Iron River	...do									.20						.50																	
Kewaunee	...do									.15		.05			.05	.20					.25		.35				.50						1.55
Manitowoc	...do		.02							.11		T.			.05	.18				.01	.39		.01			.16	.02						0.95
Menasha	Fox		T.							T.			.05			.13					.17		T.				.24						0.59
Menominee Falls	Lake											T.	.05			.15				.05	T.	.25	.04				.28	T.					0.82
Milwaukee	...do		.01						T.		T.	T.	T.			.04	T.		T.	.01	.23	T.	.02		T.	.27							0.58
New London	Fox		T.										T.			.20					.18		.07				.30						0.84
Oconto	Lake									.15	.40	*	.50			.60					.20		.10			.30							2.25
Oshkosh	Fox		T.								T.	T.	.10			.10					.40		.02				.10						0.72
Pine River	...do		T.								T.	.01	.02			.16			T.	T.	.18		.04				.09						0.50
Plum Island	Lake		.09									.08				.06					.07		.04			.03	.34						0.71
Port Washington	...do											T.	T.			.10				*	.40	T.					.30						0.80
Racine	...do		T.									T.	T.			T.	T.			T.	T.	.12	.03				.15	.06					0.36
Sheboygan	...do			T.						T.		T.			T.	T.				.10	.10	.30	T.				.20	T.					0.70
Sturgeon Bay	...do		.07							.09		.06			T.	.55	T.				.15					T.	.98	T.					1.90
Superior‖	...do		T.								.02	.02				.02	.12				.07		T.			.11							0.36
Waupaca	Fox											.01				.19					.20		.03				.32						0.75
Illinois.																																	
Chicago	Lake Michigan		.19	.01		T.			T.	T.	T.	T.	T.			T.	T.	T.			.08	.03	.06				.52						0.89
Indiana.																																	
Auburn‖	Maumee			.05		T.							.03	.05				.21	.16		.04		.12	T.			.75	.10					1.51
Berne	...do			.20						.20	T.		.15				.40	.43			.15	.01					.04	.72	.01				2.31
Elkhart‖	St. Joseph	T.		.15		T.	T.			T.	.15		.20	T.			.02	.05	T.		T.	T.	.15				.04	.70					1.46
Fort Wayne	Maumee			.14		T.	T.			.07			.13	.01			*	.21	.03		.09	T.	.01				.12	.56	T.				1.37
Hammond	Lake Michigan		.63													.10							.10				.56						1.39
Howe‖	St. Joseph										.10		.10	.10							.10			.30				.85					1.55
South Bend‖	...do			.20			.09				.04		.09	.08					.09	T.		.17	T.	.18				.95					1.89
Whiting	Lake Michigan		.06	.10									T.	T.			T.				.01		.03				.38	.12					0.70
Michigan—Upper Peninsula.																																	
Baraga	Lake									.30			.20			.70										.10							1.30
Bergland	Ontonagon					T.			T.	.20		T.	.17			.18	.07				.15		T.			.22		T.					0.99
Blaney	Manistique									.10		.04				.15							.01										
Calumet	Lake	T.				.08	.02		.06	.08	T.	.04	.16	T.		.32	.32	.20	.16	.04	.08	T.	.04			.32	T.	T.					1.92
Chatham	...do				.02	.04	.04		.03	.11		.04	.28			.37	.14				.26	.07	.04			.14							1.58
Deer Park	...do				T.	.30	T.			T.		T.		T.	.15	.40	.20	.10			T.		T.	.10	.15	.30							1.70
Detour	St. Marys												.40				.60								.40		.60						2.00
Eagle Harbor	Lake	.12	.08		T.	T.	.08		.02	.10		.03			T.		.55	T.	T.	.05		.10	.10	T.	T.		.40						1.63
Escanaba	...do		.05			T.	T.		T.	T.	T.	.06	T.			.50					.08		.06			.38	.25						1.47
Ewen	Ontonagon				.20				.20	.40		T.	.35			.80	.20				.15		.10			.20							2.60
Grand Marais	Lake		T.		.30	.20			T.	.40	T.			.20		.30	.40	.20	.10	.30	.20		.10	.20			T.						2.90
Houghton	...do	T.			.01	.08	T.		.04	.03	T.	.12	.03	T.	T.	.41	.14	.18	.07	.04	.08		.05	.01		.25	T.	T.					1.54
Humboldt	Escanaba																																
Iron Mountain	Menominee		T.							.10			.15			.56					.16		T.			T.	.23						1.20
Iron River	...do										.30					.50	.30				.20		T.			T.	.30						1.60
Ironwood	Lake					T.			T.	.40	.10		.20				.40	.30								.20							1.60
Ishpeming	Escanaba					.03			T.	.06		.04	.20			.40	.10				.05		.02			.10	.30						1.30
Isle Royale	Lake																																
Mackinac Island	...do																																
Maple Ridge	...do		.10									.30	.20			.50							.20			.20	.60						2.10
Marquette	...do		T.		.08	.27	.13		T.	.06	.01	.05	.34		T.	.08	.27				.27	T.	.02			.11	.22						2.81
Menominee	Menominee									.10		.20	.10			.50					.05		.08				.20						1.23
Newberry	Tequamenon															.10	.10						.10										
Powers	Lake									.10		.35	.30			.58						T.				.15							1.48
St. Ignace	...do		.02	.01									.10			.40	.15								.10		.35						1.13
Sault Saint Marie	St. Marys	.04	T.		.09				T.			.10	.03	.15	.06	.32		T.			.17		.05	.02		.15	.38						1.56
Thomaston	Lake					.10			.20	.10			.10			.30	.20				.10					.10							1.20
Victoria	Ontonagon					.03			.02			.04	.10			.25					.14		.03			.18							0.79
Watersmeet	...do		T.			T.			T.	.10	T.	.05	.06			.45	.03				.16		.03			.16							1.04
Wetmore	Lake					.20						.20				.60	.30						.20										1.50
Whitefish Point	...do	.05	.08		.22	.11	T.					.20	.02	.20	.40	.51	.30	.02								.90	T.						3.75
Michigan—Lower Peninsula.																																	
Adrian	Raisin		.40	.05									.30				.20										.70		.40				2.05
Agricultural College	Grand		.20	.20						.50	.50	.05				.15					.40						.20	.15					2.65
Allegan	Kalamazoo			.11		T.				.10	.10		.30		T.	T.					T.	.20	.30										1.11
Alma	Saginaw		.10	.12		T.				.10	.08		.09			.17						.22	T.	.09			.37	.18					1.52
Alpena	Lake		.06		.01	.01	.01		T.	T.	T.	.11	.04			.28	T.		T.		.26	T.	.08			.03	.20	T.					1.09
Ann Arbor	Huron		.02	.10						.05			.30	T.		T.	T.	.20	T.			.05	.07	T.			.21	.37	.06				1.43
Arbela	Saginaw			.52									.33		.08	.16						.13		.13				.62					1.97
Battle Creek	Kalamazoo		.05	.28						T.			.18	T.	T.	T.					T.	T.	.04	T.			.50	.50					1.55
Bay City	Saginaw		.60										.30			.15						.60	.30					.90					2.85
Benzonia	Betsie		T.			.12	.03					.04	.15	.38	.03		.30	.02	T.	.07	.32	.04	.24	.65		.05	.28	.10					2.82
Berlin	Clinton		T.	.51					T.			.04		.30	T.		.05		T.	.11		.10	T.	.02			.08	.47	T.				1.68
Big Rapids	Muskegon		.10			T.			T.	T.	.10	T.	.10		.10		.10			.60	T.		.10	.20			.50						1.90
Bloomingdale	Lake		T.			.10				T.	T.	T.	T.	.20					T.	T.			.30	.10	.40	T.	.30	.30						1.70
Cadillac	Manistee		T.			.18						.15	.10			.90			.05			.25	.05				.22						1.90
Cassopolis	St. Joseph		T.			T.							.50	.20					T.		T.	T.	T.	.30			.90	.10	T.				2.00
Charlevoix	Lake															.20					.20						.40						0.80
Charlotte	Kalamazoo			.27						T.			.15			T.							T.				.21	.38					1.01
Cheboygan	Cheboygan				.05							T.				T.	.65				T.		T.	.05		T.	.55	T.					1.30
Clinton	Raisin			.30									.20						.16								.10	.43	.15				1.34
Coldwater	St. Joseph		.10	.50						T.			.20						.10			.20	T.	.10			.50	.60					2.30
Concord	Kalamazoo									T.	T.	T.	.95						.15			T.	.11	T.		.17	.30						1.68
Croton	Muskegon		T.				T.				T.		.15		T.	T.	T.		T.	.40		.05	T.	.15			.15	T.					0.90
Detroit	Detroit		.14	.17		T.				.02	T.	.09	.25	T.	.02	T.	.08	.13	T.		.06	T.	.11	.01			.25	.51	T.				1.84
Durand	Saginaw		T.	.38						T.	.04		.12		T.	T.						T.	T.	T.			.17	.37					1.08

TABLE 2.—*Daily precipitation for February, 1910. District No. 4*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Michigan—Lower Peninsula—Cont'd.																																	
East Tawas	Lake		.10									T.	.20			.18					.40		.10			T.	.22						1.20
Eloise	Rouge					T.				T.	T.		.27	.05	T.	T.	T.	.09	.10			.07	T.	.08				.03	.41	.20				1.30
Flint	Saginaw		.50								.07		.12									.05		.04				.10	.20					1.08
Frankfort	Betsie					.10	.40	.10			.10	.30	.30	.10						.10		.50	.20	.20		.10								2.70
Ganges	Lake		.09			.08	.09				T.		T.	.10						T.	T.	.30	.10	.09			.40	.10						1.35
Gaylord	Cheboygan	T.			.10							.03				.15							.03			T.	.08						
Gladwin	Saginaw		.30													T.						.50					T.	.15					0.95
Grand Haven	Grand		.14			.03	T.		T.	.02	.02	T.	.13		.01	.03	T.	T.	.11	.17	.15	T.	.16	.04	T.	T.	.58						1.59
Grand Rapids	...do		.10	.02		T.	T.		T.	.02	.01	.03	.09		.01	.01	T.		T.	T.	.12	.02	.12	T.			.58	.02					1.15
Grape	Raisin			.29		T.				.01	.02		.12	.06			T.	.10	.10			.03	.01	.02			.05	.48	T.					1.29
Grass Lake	Grand			.25		T.				T.			.50				T.		T.				T.	T.			.16	.38	T.					1.29
Grayling	Au Sable																																	
Harbor Beach	Lake		.20	.60			.50						.20			.20						.20		.20				.05						2.15
Harrison	Saginaw		.25	.40									.28			.19				.12		.28	.08											1.60
Harrisville	Lake		.20							T.		.05	.30			.40						.30	T.			.05	.10							1.40
Hart	Pentwater					.10				.40		.20	.40			.10										.40								1.60
Hayes	Pigeon		.60										.20			.20					.20					.43								1.63
Highland	Huron		.61										.30	.05	.10								.10	.10	.10		.20	1.15						2.71
Hillsdale	Saint Joseph		.13	.05		T.				T.	T.		.38	T.			.05	.10				T.	.05	.05	T.		.25	.40						1.46
Holland	Lake		.15	.05						.02	.05		.09						.05	.35	.08	.25	.20	.15			.66	.08						2.18
Howell	Saginaw		.10	.15						T.			.10			.10					T.		T.	.05		1.00							1.50
Ivan	Manistee		T.			.06	.06		T.			T.	.06			.20	.04			T.	.12	.19	T.	T.		T.	.20	.08						1.01
Jackson	Grand																																	
Jeddo	St. Clair		.30	T.							.02		.25	.25	T.	T.		.05	.05			.10	.02	.10			.05	.25						1.44
Kalamazoo	Kalamazoo		.12							.05			.20				.26				.17		.02			.48							1.30
Lansing	Grand		.03	.27			T.			T.	.03		.25			.01	T.					T.	.07	.03	.02		.25	.35						1.31
Lapeer	Saginaw		T.	.40									.05					T.						T.	T.		.03	.71						1.19
Ludington	Pere Marquette		T.			.07				.12						.40	.20					.40	*	.50			.12							1.81
Luther	Manistee		.03	T.		T.	.01		.01		T.	.01	.26		.02	.14	.03		T.	.21	T.	.23	.01	.08			.37	.11						1.52
Mackinaw	Lake	.05	.02		.02							.10				.10					.05						.05	.60						0.99
Mancelona	...do				T.	T.						T.	T.			T.					.60		T.	T.		T.	.20							0.80
Manistee	Manistee					.10	T.					.10	.40	T.		T.	T.			T.	.50		T.	T.			.40							1.50
Midland	Saginaw		.04						T.				.35		T.							.35	T.	.25			T.							0.99
Montague	White																																	
Morenci	Maumee		.01	.20						.03			.19			.04		.07				.10					.12	.65	.24					1.65
Mount Clemens	Clinton			.05							T.		.40	T.				.10	.10				T.	T.			.05	.45	.07					1.22
Mount Pleasant	Saginaw			.10							.20		.05			.01																		
Muskegon	Muskegon		T.	T.		T.	T.			T.			.10	.10		.10	T.			.60	T.	.10	.20	.20			.12	.05						1.57
Old Mission	Lake					.08		.12					.15			.15	.10		.08		.22					.20	.10							1.20
Olivet	Kalamazoo		.14	.18						T.			.28	T.		.01	T.				T.	.02		.10			.48	.38						1.59
Omer	Lake		T.										.40		T.	.20				T.			.40				.65							1.65
Onaway	Cheboygan												.25			.60							.70			.60								2.15
Ovid	Grand																																	
Owosso	Saginaw		.10	.40					T.	T.	.10		.25															.50						1.35
Petoskey	Lake		.12		T.	T.			T.			T.				.50	.20		.20	.25	.40	.10	.10	.10			.40							2.37
Plymouth	Rouge			.50						T.		T.	.40					T.						T.				.60						1.50
Pontiac	Clinton		.02	.45							.03		.23	T.	T.	.05		.02	.05				.04	.08		T.	.05	.40	.05					1.47
Port Austin	Lake																																	
Port Huron	St. Clair		.10	.25					T.	T.	.01	T.	.21		T.	T.	T.	.05	T.		.02	.10	.03				.31	.17						1.25
Reed City	Muskegon		.03	.10							.10		.15			.05				.40	.10						.50							1.43
Roscommon	Au Sable		T.										.10			T.	T.				.30	.10	.10	.20		T.							0.80
Saginaw	Saginaw		T.	.25	.10		T.		.05	T.	.05		.40		.05	.15	T.					.15	.10				.10	.25						1.65
Saginaw, W.S.	...do		.05	.14		T.			T.	T.	.01		.22	T.	.02	.11						.20	.02	.02			.17	.27						1.23
St. James	Lake			.05		.10							.15			.40					.20					.05	.40							1.35
St. Johns	Grand																																	
St. Joseph	St. Joseph		.15			.20	T.					T.					T.	T.				.10	.05	T.			.90							1.40
Sandusky	Lake			.80									.20				.40	T.									.90	.47						2.77
Saranac	Grand			.30							.07		.15			.02						.07	.03	.04			.37	.31						1.36
South Haven	Lake						.20											.10					.20				.20							0.70
Stanton	Grand		.10								.10		.20		.10						.20			.20			.01							0.91
Thornville	Saginaw		.10								.15		.40	.30				.20	.10			.20		.10		.18	.20							1.93
Traverse City	Lake											.05							.10		.50													0.65
Vassar	Saginaw			T.									.20		.10	T.											T.							
Wasepi	St. Joseph		.14										.18	.18			.13				.02		.12				.80	.05						1.62
Webberville	Grand		.02	.16							.10		.22									T.	.05	.10			.41	.20						1.26
West Branch	Lake												.05					.30	T.			.05					T.							
Woodlawn	Au Sable		T.	.10	.10							.25				.40					.65		.20											1.70
Ypsilanti	Lake		.05	.43									.30	.05		T.		.30				.10	.02	.02			.40	.65	.12					2.44
Ohio.																																		
Akron‖	Lake	T.		.13	.10	T.	.02				.48		.61	.06			.90	.45	.30			.20	.03					.10	.30						3.68
Benton Ridge	Maumee			T.			.03			.30			.30				.20	.80	.10			.05	.05	.05				.65	.05						2.58
Bowling Green	Lake			.31	T.	T.				.20			.30				.15	.25	.25				.10					.74	.08						2.38
Bucyrus	Sandusky			T.						.60		1.00					.50	.70	.20			T.	T.			T.	1.10	.50						4.60
Cleveland (1)	Lake			.34		.05	T.			.58	.04	.43	.47	.06	T.	T.	.42	.54	.04			.06	.08	T.	T.		.01	.86	T.					3.98
Cleveland (2)	...do		.25	.25		.05	T			.25	.21	T.	.60	.55		.07	.85	.55					.04				.20	.90	.01					4.98
Defiance	Maumee			.22						.06			.15				T.	.21	.05			.06	T.				.11	.34	.14					1.34
Findlay‖	...do			.95						.40			.40					.60	.60			*	.05	T.				.48	.42					3.90
Fremont	Sandusky		*	.36						.23			.29				*	.81				T.	.12	.02			*	.85						2.68
Hedges	Maumee			.34						.20			.60		.30			.50				.26	.10	T.			.14	.65	.11					3.20
Hillhouse	Lake			.50		T.	T.			.46	.11	T.	.60	.25	T.	T.	T.	.40	.30			T.	.15	.10			T.	.40	.40						3.67
Hiram	...do			.42	.03	T.	T.			.41	T.	.03	.41	.10			.23	.75	.25				.08	.08				.56	.38						3.73
Hudson	...do			.31		.05	.10			.50			.50	.30			.10	.90	.40				.10	.10				.35	.48						4.19
Lima	Maumee			.35						.50			.30				.50	1.00				T.	.10	T.			T.	.88	.10						3.73
Medina	Lake			.51		T.				.60			.48				.30	.40	.60				.06					1.03	.35						4.33
Montpelier	Maumee			.38		T.				T.		.30	.10				T.	.40					.10	T.			.83	.20						2.31
Napoleon	...do			.35						.10			.18				.02	.15	.13			.06	T.				.09	.61	.17					1.86
New Bremen	...do			.17		T.				.50			.45				.40	.80				.10	T.					.62	.18						3.22
North Royalton	Lake			.30		.10				.40			.80	.40			.20	.40	.30					.10				.75	T.						3.75
Norwalk	...do				.24	T.				.30			.90	.30			.15	.50	.70				.10	.50				.60	.49						4.68
Oberlin	...do			.30		.06	.12			.40			.68	.09			.10	.62	.52			T.	.13	.06				.62	.45						4.15
Ottawa	Maumee		.05				T.			.40		T.	.14	T.			.11	.30	.03			T.	.05	.05			.07	.69	T.					1.89
Rome	Lake																																	
Sandusky	...do		.10	.21		.02				.18	T.	.18	.20	T.	T.	T.	.55	.55			T.	.01	.06				.02	.80	T.					2.97
Tiffin	Sandusky			.32		T.	T.			.40	T.	T.	.40	.10	T.		.20	1.00	.10			T.	.10	T.			T.	.89	.32						3.83
Toledo (1)	Maumee		.11	.18		T.	T.			.10	T.	.06	.20	T.	T.	T.	.26	.23	T.		.13	.07	.06				.34	.58						2.32
Toledo (2)	...do			.29		T.	.01			.08	T.		.23	.01			.05	.35	.07			.20	.06	T.			.10	.47	.05					1.97
Upper Sandusky	Sandusky			.05						.60			.60				.15	.80	.25		.05			.10			T.	.73	.37						3.70
Vickery	Lake			.32		T.				.20	T.		.25	.02			.13	.40	.05				.08	.05				.69	.31						2.50
Wauseon	Maumee		T.	.30		T.	T.			.08	.01		.22				.02	.21	.06			.14	.02	.03			.12	.67	.06						1.94
Wellington	Lake			.38		T.	.10			.60		.01	.97	.02		.01	.31	.30					.10					1.00	.56						4.36
Willoughby‖	...do			.65							.50		.50	.20			.10		.60			.28							1.17					4.00
Pennsylvania.																																		
Erie	Lake		T.	.32		.05				.50	.04	.14	.45	.02	.03	.01	.08	.68	.06			.18	.18				1.23	.05						4.02

TABLE 2.—*Daily precipitation for February, 1910. District No. 4*—Continued.

Stations.	River basins.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
New York.																																	
Adams Center	Lake	.25	.20	.60	.50	.40	.40	T.		.20	.40	.20	1.40	.20	.70	.20	.22	.20	.40	.30	.20	.25	.10	.40	.30	T.	.30	.52	.22				9.06
Angelica	Genesee			.29	.02	.01		.01		.10	.12		.92	.03	.01	T.	.11	.49	.38			T.	.32	.11				.36	.47				3.75
Appleton	Lake		T.	.50			T.			.17			.75	T.		T.	.20	.03	.22			.15	T.		T.			.35	.35				2.72
Auburn	Oswego			.12			.06			.08			1.30				T.	.46	.84			T.	.32					.30	.52				4.00
Avon	Genesee	T.		.20	.08	T.	T.	T.		.12	.12		.92	.10		.02	.08	.25	.20			T.	.22					.26	.85				3.42
Benson Mines	St. Lawrence																																
Blue Mountain Lake	Raquette			.80		.20				*	.30		1.20	.10	.30		T.	.60				.27	.50	.40				.85	.65				6.17
Brockport	Lake	T.		.60						.22	.17		.72	.12		.02	.10	.32	.75			.03	.10			T.		.23	.70				4.08
Buffalo	Lake		T.	.50		.01	.11	T.		.28	.10	.20	1.41	.08	.08	.22	.16	.86	.16			.18	.21			T.		.87	.36				5.74
Canton	St. Lawrence	T.	.01	.15	.02	.06		T.		.40	.40		.24	.06	.01	.05	.02	.17	.02	.01		.11	.03	.11				.54	.46				2.87
Cape Vincent	....do			.46					T.	.50			.10						.06	T.		.08		.04				.16	.19				1.59
Carvers Falls	Lake			.71	.50					.32			.52					.37				.32	.29	.18				.48	.92				4.61
Chazy	....do			.50									1.00		.10				.60														2.20
Dannemora	....do	T.	T.	.30	.18			*	.05	T.	T.	*	1.40	*	.15	.10	T.	T.	T.		*	.05	.15	.70			*	.40	.40				3.85
Elba	Lake		.10	.60		T.	T.	T.		.30	.40		1.00	.20	T.	T.	T.	.40	.80			T.	.20	.40				1.00	.05				5.45
Fayetteville	Oswego			.50	.06	.06	T.			.02	.02	T.	.85	.16	.04		T.	.30	.41			T.	.32	T.			.01	.71					3.49
Gabriels	Lake	T.	.04	.25	.11	.06	T.	T.	.03	.02	.26	T.	.48	.05	.08	.07	T.	.06	.55	T.		T.	.14	.22	.02			.10	.02				2.56
Harkness	....do			.50	.10		.05						.85	.03					.72				.10	.10				.07	.48				3.00
Hemlock Lake	Genesee																																
Hunt	....do			.30		.21				.30			1.08			T.		.90					.18					1.02					3.99
Ithaca	Oswego	T.		.40		.02	.05	.02		.08	.01	.30	.59	.02	T.	T.	.14	.89	.02		.03	.05	.34			T.	T.	.16	.19				3.31
Keene Valley	Au Sable			.68								T.	1.04	.10	T.	T.		.18	.65			T.	.15	.28				.89	.38				4.35
King Ferry	Oswego			.37	.04		.02	.02		.15			.84	.08			.06	.33	.36				.26					.06	.30				2.89
Lake George	Lake		1.07	.33						.17	T.		1.02			.21		.26	.71		.47		.35	.34				.63	.58				6.14
Lake Placid Club	Au Sable, W. Br.	T.	.05	.80	.05	.30			.02		.60		1.15	.05	.43	.05	.46	.05	1.10			T.	.31	.25				.36	.54				6.57
Le Roy	Genesee	.02	T.	.62		.05	.05	.04		.36	T.		.94	.12	T.	.07	.07	.34	.40			.07	.21	.15				.24	.77				4.52
Lockport	Lake			.65		.04	.03	T.		.20	.18		.82	.14		.05		.15	.85	T.		.11	.04	.03		T.		.28	.43				4.00
Lowville	....do			.80						.25			1.35		.10			.50				T.						1.15	.39				4.54
Lyndonville	....do			.39						.23			.57			.03			.21						.13			.63					2.19
Moira	St. Lawrence		T.	.35	T.	T.				.05	.65		.70	.40	.20		.20		.90	.10				.20				.27	.53				4.55
Nehasane	Lake			.82	.07	.38					.41		1.29	.09	.60	.09		.10	.61			.32	.40	.90				1.14	1.02				8.24
North Lake	....do																																
Ogdensburg	St. Lawrence		T.	.13	T.	T.			T.	T.	.20	T.	.18	.07		T.	.15		.33			.09		.05				.19	.50				1.89
Old Forge	Lake		.02	.89	.10	.30				.10	.39		1.20	.09	.69	.05	.05	.10	.40	.02		.25	.45	.30				.19	.25				5.84
Oswego	....do	T.	.02	.59	T.	.01	.02	T.		.26	.06	.20	1.41	.10	.03	.03	T.	.44	.14			.03	.15	.27	.38		T.	.49	.39				5.02
Otto	....do			.64							.54	T.	.42	.07				.10	.45			T.	.14	T.				.41	.70				3.47
Palermo	Lake	.20			.50	.04	.12	.10		.03	.41	2.41	.50	T.	T.	.03	.05	.21	.13	.05		.04	.18	.22	.31	.05	.03	.06	.86				6.53
Perry City	....do			.40						.20	T.	.08	1.35	.15			.16	.64	.70				.45					.06	.18				4.37
Philadelphia	St. Lawrence		.04	.30	.04	.02				.08	.75		.62	.04		.04	.05		.32	.03		.12		.10				.31	.46				3.32
Plattsburg	Lake		.01	.10	.51		T.				T.		.70	.03		T.		T.	.67			.10	T.	.09				.09	.50				2.80
Potsdam	St. Lawrence		.27	.34		.18				T.	1.10		.41					*	1.06			T.	T.	T.				.20					3.56
Raquette Lake	Raquette.		*	.77	.31	.22				T.	.23		.69	.16	.20	T.		.21	.86			.16	.43	.23				.85	.89				6.21
Rochester	Genesee	T.	.02	.43		.02	.11	.01		.34	T.	.03	.87	.13	T.	.03	.04	.61	.08			.02	.11	.07		T.		.55	.26				3.73
Romulus	Oswego	T.		.33	.03			.20		.03	.20		1.60				T.	.65	.60			T.	.66					.16	.31				4.77
Shortsville	....do			.20		T.	T.			.50	T.		1.00					T.	.42				.30	T.				.40	.50				3.32
Skaneateles	....do			.55		.14	.10				.17		.65	.10		.06	.35		.20	.12	.28	.07		.05	.10	.11	.18	.12	.75				4.10
Syracuse	....do	T.	.03	.44	.01	.05	.04	T.		.06	T.	.32	.90	.09	T.	T.	.05	.49	.04			.01	.43	T.	T.	T.	T.	.56	.12				3.64
Ticonderoga	Lake			.90	.09					T.			.70	T.		T.		.04	.35			.50	.30					1.35					4.23
Trudeau	....do	.63	.22	.27		.05	T.	T.		.07	T.	.03	.27	.24	.18	.29		.21	.10	T.		.12	.14	.22	.29	T.		.33	.20				3.86
Tupper Lake	St. Lawrence			.80	.10	.25				T.	.15		1.50			.18	.03		.50			.05	.13	.40				.50	.20				4.79
Volusia	Lake			.25		.11	.45			.24	.30		.75	.18			.10	.18	.25			.11	.10	.11				.28	.90				4.31
Watertown	....do																																
Wedgewood	Oswego	.01		.48	T.	.04	.15	T.		.48	T.	*	.95	T.		T.	.10	.60	.23			.02	.40	.10				.05	.30				3.91
Westfield	Lake		T.	.41		.17				.48	.33		.80	.19	.17		.09	.17	.80			.06	.09					.46	.76				4.98
Youngstown	....do			.72							.14		1.13			.05		.28	.51		.14							.27	.33				3.57
Vermont.																																	
Burlington	Lake		T.	.79	.07	T.	T.	T.	T.	.06	.04		.67	.05	.01	T.	.01	.31	.66			.04	.19	T.	T.			.15	.05				3.10
Cornwall	....do			.70				T.		.05			.70		T.	T.		.14	.70			.05	.20	T.					.22				2.76
Enosburg Falls	....do			.31	.15	.10				.04	.22		.44	.07	.04			.07	.82			.28	.10	.10				.15	.65				3.54
Northfield	....do			.84	.14	T.	T.			.04	.08		.71	.04	T.	.02	.02	.39	.28			.14	.26	.04				.32	.31				3.63
Rutland	....do																																
Wells	....do			.63	.27						.23		.35	.15			T.	.31	.78			.32	.33					.49	1.15				5.01

TABLE 3.—*Maximum and minimum temperatures at selected stations, February, 1910. District No. 4, Lake Region.*

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Michigan, Upper Peninsula.										Michigan, Lower Peninsula.					
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	30	20	28	12	37	18	36	19	40	35	38	8	29	16	34	17	32	22	32	18	26	16	30	12	32	7	30	13
2...	30	14	28	15	32	17	36	30	43	34	48	29	29	23	30	21	32	14	31	28	28	22	31	25	40	22	28	15
3...	31	11	34	5	35	18	33	23	37	27	44	29	38	15	34	— 6	34	5	38	18	34	6	36	22	38	24	35	15
4...	25	6	29	15	33	17	33	20	35	26	40	24	33	14	28	8	30	7	30	11	30	6	35	17	31	20	33	17
5...	9	— 3	19	2	18	8	22	10	26	17	44	20	17	4	16	6	10	4	12	7	7	— 8	17	2	30	16	23	10
6...	23	7	15	— 8	15	1	15	2	20	9	24	13	17	0	19	3	19	4	17	5	2	—15	5	— 3	19	6	10	—11
7...	32	11	39	4	32	8	32	10	36	16	37	12	34	8	38	7	38	19	43	14	33	2	36	3	30	5	30	0
8...	33	11	33	23	36	23	35	27	38	30	42	27	34	21	29	25	31	19	33	20	32	22	36	26	33	21	30	21
9...	13	2	26	13	23	13	27	14	30	22	40	25	22	13	26	7	19	10	20	14	22	— 5	32	9	34	21	30	15
10...	18	0	18	5	18	4	19	6	22	16	33	17	20	11	23	0	17	8	20	11	5	—16	11	— 4	25	11	16	5
11...	16	4	20	5	22	5	32	12	38	21	31	11	24	10	18	— 5	21	12	20	12	23	—16	26	— 5	27	11	25	2
12...	25	— 6	21	4	27	6	24	9	22	12	29	18	27	5	21	— 3	23	16	24	12	25	17	24	20	25	20	25	15
13...	32	12	38	2	28	5	26	9	30	11	32	5	34	7	28	— 2	27	19	31	13	28	17	30	14	26	11	25	15
14...	25	11	30	5	32	16	37	21	44	28	37	21	34	10	28	— 3	28	11	34	15	30	12	38	13	34	16	33	12
15...	17	— 6	23	3	25	10	43	21	51	29	48	24	16	4	19	— 8	15	7	16	6	12	— 3	29	12	43	27	30	16
16...	1	—18	11	0	14	2	21	4	29	18	48	22	15	0	12	— 7	7	1	14	— 4	6	— 6	25	5	45	18	26	11
17...	3	—18	6	—16	9	— 8	8	0	18	5	23	14	12	— 7	3	—21	6	0	10	— 7	13	—15	18	1	19	12	22	6
18...	2	—17	9	—20	12	—13	16	— 5	23	2	21	— 2	12	—11	8	—29	7	—14	12	— 7	15	—12	16	— 1	16	8	15	2
19...	6	—18	13	—19	15	— 5	29	12	32	17	30	— 5	10	—10	14	—38	9	— 7	15	— 7	17	—23	25	3	27	8	20	5
20...	15	— 1	18	— 1	24	8	31	21	37	24	44	5	22	3	16	— 8	18	— 4	19	8	22	— 7	32	11	40	17	28	11
21...	6	—12	14	— 5	20	5	22	14	31	24	40	26	21	4	16	—33	11	— 8	14	3	16	— 5	26	5	38	20	27	7
22...	— 1	—17	16	—13	17	— 3	24	— 5	29	3	31	20	18	— 6	8	—29	10	— 7	16	— 5	10	—13	22	5	25	11	22	— 1
23...	2	—22	2	—21	2	—16	0	—11	7	— 6	29	2	3	—15	1	—29	0	— 8	4	—10	6	— 7	12	— 1	24	1	15	— 8
24...	9	—16	12	—18	11	—13	12	— 4	17	0	21	3	11	—14	16	—31	8	— 6	13	— 8	13	—17	18	—10	20	3	15	— 7
25...	19	4	15	—16	27	0	30	6	32	14	27	12	26	—13	18	—25	25	—16	23	— 2	19	—21	20	—11	22	2	16	— 9
26...	28	6	35	14	38	25	37	29	41	32	45	21	36	26	34	17	35	18	36	23	33	19	36	18	40	16	33	5
27...	19	— 6	33	11	35	17	35	17	36	28	43	35	33	16	33	12	18	— 1	24	13	33	16	35	20	38	30	33	13
28...	33	9	31	— 4	35	10	34	20	34	27	36	30	31	5	30	—12	35	— 6	36	10	33	5	34	14	35	27	38	11
29...																												
30...																												
31...																												
Mns	17.9	— 1.1	22.0	— 0.1	24.0	6.4	26.8	11.8	31.4	18.2	35.9	16.6	23.5	5.0	21.8	— 5.9	20.2	4.2	22.7	7.6	20.5	— 1.0	26.2	7.9	30.6	14.7	25.5	7.4

Date.	Michigan, Lower Peninsula.						Ohio.								Erie, Pa.		New York.								Vermont			
	Detroit.		Muskegon.		Saginaw, W.S.		Cleveland.		Lima.		Sandusky.		Toledo.				Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	31	11	.....	.....	33	9	31	15	34	10	35	11	35	11	28	20	26	19	24	—10	29	20	26	11	20	— 4	22	— 9
2...	38	25	36	28	34	22	44	28	47	29	44	30	44	29	45	27	40	26	32	12	37	23	37	21	28	3	30	— 2
3...	36	23	33	23	36	23	42	25	43	27	39	25	40	28	44	21	38	22	25	18	33	24	36	19	26	20	25	21
4...	33	20	33	22	34	19	36	23	39	24	36	23	37	25	31	21	29	14	30	2	30	15	31	16	24	11	28	4
5...	24	12	30	18	30	14	28	14	38	23	28	15	29	15	27	14	25	9	25	— 1	27	9	29	6	25	5	25	— 6
6...	12	3	18	6	16	— 2	14	5	36	13	15	7	15	7	14	2	9	— 6	— 1	—11	9	0	6	— 7	5	— 9	— 4	—12
7...	28	3	33	7	31	1	27	5	35	10	34	7	34	8	26	1	24	— 6	20	—22	25	— 2	16	—11	4	—17	2	—15
8...	37	23	35	20	35	22	43	24	42	27	43	29	42	28	43	25	39	23	36	20	40	22	40	16	32	4	38	— 4
9...	36	21	35	22	35	20	37	23	38	24	38	23	39	24	38	22	37	19	37	26	38	23	40	28	37	26	39	29
10...	24	13	22	7	22	3	22	10	29	15	24	16	30	18	22	8	20	8	26	— 6	23	9	28	14	34	5	39	4
11...	28	14	30	8	28	5	27	7	29	10	28	14	29	14	25	2	26	1	8	—27	21	3	20	4	15	— 7	16	—15
12...	26	19	28	20	29	18	24	19	24	6	25	19	29	20	23	17	22	14	14	4	21	14	24	11	21	11	21	9
13...	22	17	28	14	28	14	21	16	26	7	23	13	26	13	24	17	26	17	20	11	25	16	23	16	21	4	20	— 1
14...	33	15	38	25	34	16	36	19	36	20	35	19	35	18	33	19	31	15	30	18	30	20	30	18	29	10	27	0
15...	46	29	40	25	40	24	50	35	46	32	47	33	49	31	49	31	43	28	28	11	43	24	45	29	28	8	29	13
16...	37	14	40	18	45	15	50	13	47	20	39	18	40	15	48	15	43	13	42	5	48	16	48	18	45	11	51	12
17...	18	14	18	12	18	9	16	13	22	13	19	14	18	14	18	12	18	13	10	5	18	14	18	11	11	5	16	10
18...	16	6	15	11	17	7	15	7	15	0	17	4	20	5	13	8	15	7	12	1	17	6	16	7	15	0	14	— 4
19...	26	3	25	10	27	7	25	2	30	2	26	2	27	1	29	6	24	5	20	3	27	4	24	9	17	— 1	20	—15
20...	38	14	33	15	41	15	42	14	42	20	43	17	39	15	43	18	44	20	38	14	40	16	37	19	33	12	32	4
21...	36	20	30	14	38	15	39	24	42	28	39	24	38	22	43	25	40	27	41	22	40	27	43	28	40	28	47	30
22...	26	16	21	3	26	7	28	20	39	20	30	19	31	19	28	21	28	19	22	2	27	19	28	14	28	9	31	14
23...	16	4	20	3	21	— 1	21	6	30	5	21	7	20	8	28	3	26	4	18	— 1	25	4	27	7	24	8	23	9
24...	17	4	15	6	19	— 4	10	3	18	4	12	2	18	5	12	0	13	— 2	16	— 8	15	— 2	16	6	16	— 5	13	—11
25...	20	10	22	8	23	— 2	23	1	26	1	23	6	22	8	18	— 1	18	— 1	16	—11	20	1	17	6	19	—12	16	—23
26...	40	20	37	18	40	16	47	19	43	19	48	20	44	19	49	18	46	13	38	4	39	14	39	10	33	— 5	29	—17
27...	41	34	37	30	38	31	47	33	45	35	47	33	43	35	49	36	47	37	43	35	45	38	47	39	42	33	49	29
28...	35	29	37	20	36	29	34	32	37	31	33	32	35	31	36	33	37	34	38	31	38	34	45	35	41	34	43	34
29...																												
30...																												
31...																												
Mns	29.3	15.6	29.2[a]	15.3[a]	30.5	12.6	31.4	16.2	34.9	17.0	31.8	17.2	32.4	17.4	31.6	15.8	29.8	14.0	25.3	5.2	29.6	14.7	29.9	14.3	25.5	6.7	26.5	3.1